

CLAIMS:

1. A surgically implantable prosthesis designed to replace a CMC joint, which implant comprises:

5 a disk having a pair of convex surfaces and an axial, flaring hole which extends therethrough from surface to surface to accommodate a flexible cord that is passed through passageways in the metacarpus and the trapezium or other carpal bone, which once surgically implanted allows the metacarpus to flex relative to the trapezium or other carpal bone enough for useful hand function, with each bone
10 sliding on the respective mating convex surface of the disk while the flexible cord conforms to the flaring surface of the axial hole in the plane of flexion.

2. The implant of claim 1 wherein said disk is circular in plan view and said axial flaring opening is a section of a torus.

15 3. The implant of either claim 1 or 2 wherein said torus has a radius of curvature which is about 15% to about 30% less than the height of said disk.

20 4. The implant of any one of claims 1-3 wherein the radius of curvature of transition surfaces between said toroidal surface and said convex surfaces is between about 0.7 and about 3 mm.

25 5. The implant of any one of claims 1-4 wherein the radii of curvature of said pair of convex surfaces are the same.

6. The implant of claim 5 wherein said radius of curvature of said convex surface is at least about twice the radius of said circular disk.

30 7. A method of repairing a deteriorated CMC joint of the thumb, which method comprises:

resecting the base of the metacarpus and the distal surface of the trapezium to provide concave surfaces which match the convex surfaces of the disk of claim 1, creating passageways in the metacarpus and the trapezium opening into said resected concave surfaces, and surgically implanting the implant of claim 1.

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8. The method of claim 7 which includes the step of selecting said implant to be implanted from a set of said implants of different sizes but all having substantially the same radius of curvature of said convex surfaces.

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9. A surgically implantable bone prosthesis designed to replace a CMC or TMT joint, which implant comprises:

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a disk having a pair of convex surfaces and an axial, flaring opening which extends therethrough from convex surface to convex surface to accommodate a flexible cord that is passed through passageways created in the proximal bone of the digitus and in the trapezium or other carpal or tarsal bone, which disk once surgically implanted allows said proximal bone to flex relative to said other bone enough for useful hand or foot function, with each bone sliding on the respective mating convex surface of the disk while the flexible cord conforms to the flaring surface of the axial hole in the plane of flexion.

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10. The implant of claim 9 wherein said axial flaring opening is a section of a torus and said disk is circular.

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11. The implant of either claim 9 or 10 wherein said torus has a radius of curvature which is about 15% to about 30% less than the height of said disk.

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12. The implant of any one of claims 9-11 wherein the radius of curvature of transition surfaces between surfaces of said torus and said convex surfaces is between about 0.7 and about 3 mm.

13. The implants of any one of claims 9-12 wherein the radii of curvature of said pair of convex surfaces are the same.

14. The implant of claim 13 wherein said radius of curvature of said
5 convex surface is at least about twice the radius of said circular disk.

15. A method of repairing a deteriorated CMC or TMT joint which
method comprises: resecting the base of the proximal bone of the digitus and the
distal surface of the carpal or tarsal bone to provide concave surfaces which match the
10 convex surfaces of the disk of claim 9, creating passageways respectively in said
bones which open into said resected concave surfaces, and surgically implanting the
disk of claim 7.